

April 8, 2019

Ms. Abigail Daken
US Environmental Protection Agency
Ariel Rios Building 6202J
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Ms. Daken:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to ENERGY STAR Connected Criteria for Large Load Products Discussion Guide released by the Environmental Protection Agency (EPA) on February 14, 2019.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR® Program. CEE members are responsible for ratepayer-funded efficiency programs in 38 US states, the District of Columbia, and four Canadian provinces. In 2016, CEE members directed nearly \$7 billion of the \$8.8 billion in energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR, so it may continue to serve as the national marketing platform for energy efficiency.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

CEE Members See Great Opportunity in the Grid Services Enabled by Connected Products

CEE is very encouraged by the release of the ENERGY STAR Connected Criteria for Large Load Products Discussion Guide and the proposed philosophy for addressing connectivity. CEE has been actively engaged in product connectivity since 2011. Over this time period, CEE has developed [consensus principles of connected](#) and optional connected criteria for

four residential product specifications ([water heaters](#), [room air conditioners](#), [clothes washers](#), and [clothes dryers](#)) all of which are consistent with the “large load” connectivity requirements proposed by EPA. We offer the following comments to support the development of ENERGY STAR specifications that meet forward looking needs of customers and the energy distribution system in the form of energy efficiency, load management, and conservation through behavior change prompted by targeted customer engagement. CEE members’ interest in connected devices and services is not limited to the ability to control products but rather to afford customers the most extensive number of options to manage energy use wisely, and if helpful, allow consumer-authorized third parties to help manage their homes’ energy use so as to save money and reduce the environmental impact of the grid.

These comments are not limited to the four products identified in the Discussion Guide and CEE supports EPA applying the philosophy to all labeled products and services where ENERGY STAR has established a “connected” market presence.

CEE Supports Eliminating Barriers for Authorized Third Parties to Leverage Connected Products as a Grid Resource by Requiring Translation to Open Standards within the Physical Premises of the Home

CEE applauds EPA’s intentions to require architectures that provide an open, non-proprietary means of achieving grid connectedness with the device within the bounds of the customer’s premises. Standardizing both the application layer and physical layer is desirable. Many of our members are driven by a desire to ensure, to the best of their ability, that the customer has a positive experience following investment in a connected product, particularly regarding energy management. Ideally a connected device or system allows any party entrusted with balancing the grid or demand response (DR) aggregation (e.g. utilities, aggregators, load management service providers) to gain customer-authorized access to that device. Requiring that the connected product communicate in an open, non-proprietary manner from within the customer’s premises provides the customer with the ability to choose who may offer beneficial services that leverage these products in the future. This approach allows the market to enable new grid and energy management services without necessitating the manufacturer’s involvement, while enabling manufacturers to participate, or provide additional value added services. CEE is not opposed to additional means for achieving connectedness. If a manufacturer wanted to include a cloud-based solution using their proprietary or non-proprietary service in

addition to what CEE has proposed above, this option is acceptable, if not desirable. Offering multiple means of participating in voluntary energy management programs ultimately benefits the customer and the grid.

Connected Product Specifications Should Ensure the Security of Customer Data

It is essential that acceptable communication pathways specified by ENERGY STAR secure customer data and adequately protect privacy consistent with the expectations of utility regulators. CEE members have experience managing customer data and privacy concerns, and our organization is available to support EPA in this space. If not proactively managed within the ENERGY STAR specification requirements, we recommend EPA require disclosure from Partners about how their products and services safeguard customer data.

A Direct Line of Sight Will Increase the Grid Value of a Connected Product

As the grid becomes increasingly dynamic, it is important for program administrators to understand the location of connected products on the distribution system to enable targeted demand side management (DSM) programs, thereby increasing their cost-effectiveness. To support program objectives, future connected specifications should require a mechanism for determining the location of a device.

Utility “visibility” to individual appliances is likely necessary to assess and act on DR opportunities. In order to maximize the effectiveness of DR programs, a product must be connected during the entire event, which requires high levels of precision and reliability. To extract additional value from the connected assets, the utility will most likely need to coordinate short DR events among many devices. In order for this to be successful, the utility must have a “clear line of sight” to individual DR-capable products, including their geographic location as it pertains to the energy distribution system.

Future Connected Criteria Should Specify Enabled, On-Board Demand Response and the Ability to Receive Signals and Share Device Status and Data

It is critical to CEE members that connected devices have enabled on-board demand response functionality. To support multiple program objectives, connected equipment should disclose its ability to accept, respond, and communicate the response to a utility signal, or equivalent consistently and reliably in a predetermined increment of time.

Variable pricing demand response programs require connected devices to accommodate both price signals and reliability signals. These programs also require the capability to share basic energy data, either directly with customers or with a customer-authorized third party. CEE references elements specified in the ANSI/AHRI Standard 1380-P as type of data and details required to meet program needs. These include:

- Verifying Connectivity
- System Type Discovery
- Utility Setup
- Registration / Cancel Registration / Re-registration
- Maximum Indoor Temperature Offset
- Operational State Query and Response
- General Curtailment
- Critical Curtailment
- Off Mode
- End Active Events
- Advanced Notification
- Cancel Scheduled/Future Events
- Utility Peak Load Price Signal
- Customer Override

Connectivity Should Not be Limited to Electric Products

CEE members also have an interest in gas demand response programs and desire for the ENERGY STAR connected criteria not be limited to electric products. If gas demand response opportunities enabled by connected products are not being considered by ENERGY STAR, CEE requests insight to the reasoning behind why they are omitted.

Connectivity Should Also Enable Behavior Change Programs

While CEE is very interested in load management, it is important not to lose sight that there are multiple aspects and ways to deliver savings through connected. We recommend that ENERGY STAR require communication pathways that not only support direct load control and variable pricing (TOU/ CPP/RTP) programs, but also emerging information based “behavior change” programs.

In several states, demand response portfolios are increasingly adding new programs that communicate information (e.g. a peak price or reliability challenge) via a compelling consumer engagement technology (e.g. an in-home display, dashboard, or mobile app). These types of programs commonly “ride the coattails” of an engaging technology that provides non-energy benefits, and often communicates via an internet or cellular connection. This program approach, which is distinctly different from direct load control, is designed to share the responsibility of program implementation with third-parties.

Consideration of customer engagement opportunities is essential because end users have a considerable, if not the largest role in determining how to use their devices and manage

the energy use of their home. Reporting the energy consumption of products directly to consumers also serves as an important disclosure element.

CEE Looks Forward to Working with EPA to Address the Specific Elements Required for Individual Products to Fully Realize their Benefits

The CEE consensus principles summarized in this comment letter lay the groundwork for connected products ultimately providing customer and utility benefits; however, these elements alone are not sufficient. Further effort will be required to specify many additional capabilities within individual connected product criteria, similar to the level of effort that was necessary to develop the 1380-P standard for HVAC systems. CEE looks forward to working with EPA and industry in this capacity.

CEE would once again like to thank EPA for the opportunity to comment on ENERGY STAR® Connected Criteria for Large Load Products Discussion Guide. Please contact CEE Deputy Director John Taylor at 617-532-0944 with any questions about these comments.

Sincerely,



Ed Wisniewski
Executive Director